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PATENT & TRADEMARK OFFICE

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John DiDomenico et al.)
)
Serial No.: 09/934,272) Art Unit: 2632
)
Filed: August 21, 2001)
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For: OPTICAL PATH STRUCTURE FOR OPEN PATH EMISSIONS SENSING

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

PRELIMINARY AMENDMENT

RECEIVED
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Technology Center 2600

Please amend the above-identified application as follows:

IN THE SPECIFICATION:

Please replace paragraph **[0038]** as follows:

[0038] If the concentration of a pollutant is uniformly distributed along the path length L and the atmosphere has only one absorbing species, then the equation becomes:

$$\ln (I)/I_o = -kcL$$

where I is the source light intensity, I_o is the detected light intensity, and kcL is the concentration of the component being measured. When the atmosphere has more than one absorbing species and the path length is not uniform, then the equation can be written as:

$$\ln (I)/I_o = \Sigma_i -k_i(v_1) \; \Sigma c_i(v,y)dy$$

where i species are mixed in the plume with varying concentrations c_i across the plume's width y. The instrument preferably uses a spectral library and this equation to calculate the absorbance and concentration of each species.